The embodiments of the invention in which an exclusive property or privileges is claimed are defined as follows:

1. A method of producing thin foils of uranium or an alloy thereof, comprising casting the uranium or alloy thereof in a sheet having a thickness less than about 5 mm and thereafter cold rolling the uranium or alloy thereof in one or more passes at substantially ambient temperatures until the uranium or alloy thereof is in the shape of a foil having a thickness less than about 1.0 mm.

2. The method of claim 1, wherein the uranium alloy includes one or more of Zr, Nb, Mo, Cr, Fe Si, Ni Cu or Al.

3. The method of claim 1, wherein the uranium alloys is a U-Mo alloy.

4. The method of claim 3, wherein the alloy content ranges up to about 12% by weight Mo, the remainder being principally U.

5. The method of claim 1, wherein cold rolling reduces the thickness of the uranium or alloy thereof in the range of from about 0.2 mm to about 0.5 mm.

6. The method of claim 1, wherein cold rolling reduces the thickness of the uranium or alloy thereof in the range of from about 0.1 mm to about 0.2 mm.

7. The method of claim 1, wherein each cold rolling pass reduces the thickness of the uranium or alloy thereof by not greater than 50%.

8. The method of claim 5, wherein each cold rolling pass reduces the thickness of the uranium or uranium alloy thereof not greater than about 10%.

9. The method of claim 1, wherein multiple cold rolling steps are employed to reduce the thickness of the uranium or uranium alloy in the range of from about 0.1 mm to about 0.5 mm.

10. The method of claim 9, wherein at least some of the cold rolling steps are followed by resistance annealing the uranium or uranium alloy sheet or foil in a protective atmosphere to relieve strain hardening and residual stress introduced by cold rolling.

11. The method of claim 10, wherein the resistance annealing is accomplished by maintaining the uranium or alloy thereof at an elevated temperature for each annealing less than about 10 minutes.

12. The method of claim 11, wherein annealing is at a temperature in the range of from about 600°C to about 1100°C.

13. An article made by the method of claim 1.

14. The article of claim 13, wherein the thin foil is an alloy of uranium and molybdenum.

15. The article of claim 13, wherein the uranium is low enriched uranium.

16. A method of rapidly annealing uranium or uranium alloy sheet or foil made by the method of claim 1 comprising applying an electrical potential across the sheet or foil to heat the sheet or foil to a temperature sufficient to relieve strain hardening and residual stress introduced by cold rolling.

17. The method of claim 16, wherein the annealing of uranium is at temperatures up to about 1100°C under a protective atmosphere of a group VIIIA gas.

18. The method of claim 17, wherein the uranium alloy is a U-Mo alloy.

19. The method of claim 18, wherein the alloy is up to about 12% by weight Mo, the remainder being principally U.

20. The method of claim 18, wherein the annealing of uranium-molybdenum alloys is at temperatures up to about 1100° C and below the melting point of the alloy.

21. The method of claim 16, wherein during each annealing the sheet or foil is maintained at annealing temperature for less than about 10 minutes.

22. The method of claim 21, wherein during each annealing the sheet or foil is maintained at annealing temperature in the range of from about 30 seconds to about 5 minutes.

23. The method of claim 17, wherein the group VIIIA gas is Ar or He.

24. The method of claim 23, wherein the group VIIIA gas is Ar.

25. An article made by the method of claim 16.